

the
business
report

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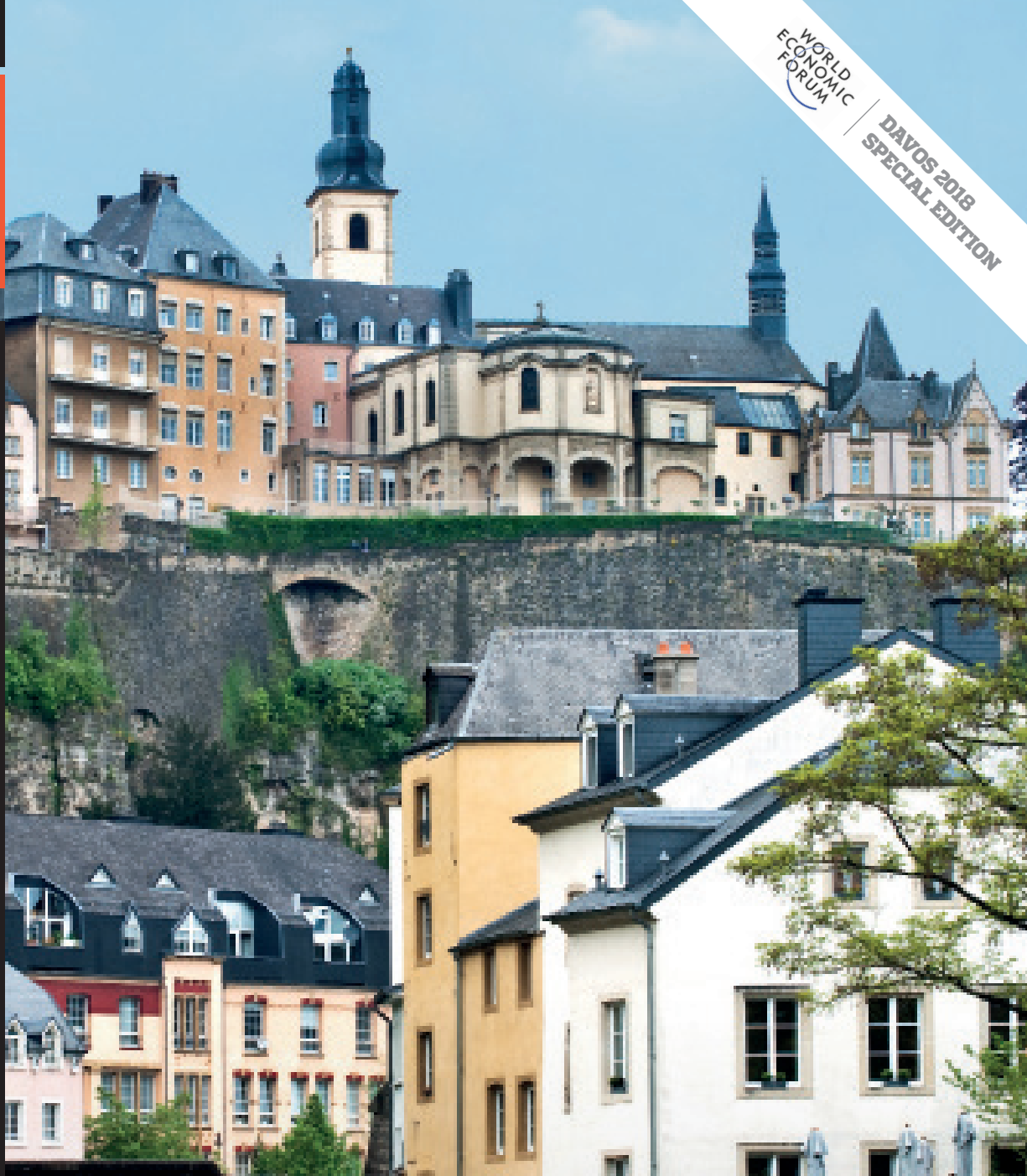
LUXEMBOURG



AN INVESTMENT GUIDE
DISTRIBUTED WITH
FOREIGN POLICY

WORLD
ECONOMIC
FORUM

DAVOS 2018
SPECIAL EDITION



08 • ECONOMY

The nation with a reach much greater than its borders

Luxembourg has become a leader in financial
firsts that belies its size.

The Luxembourg Business Report is presented by



LUXEMBOURG inside data



Located between France, Germany and Belgium, the Grand Duchy of Luxembourg is a small yet highly internationalized EU nation. With its ultra-sophisticated financial center, it ranks among the wealthiest countries in the world.



Diverse population

590,667
TOTAL POPULATION IN 2016

47%
OF PEOPLE ARE FOREIGNERS

Source: STATEC Luxembourg

Luxembourg is one of the 3 capitals of the European Union and host to the:

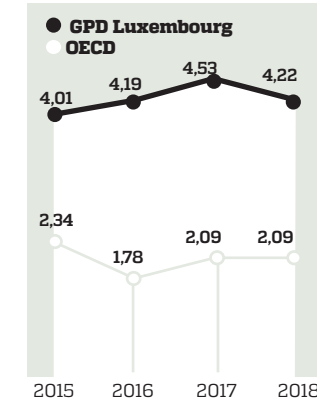
- European Investment Bank
- Court of Justice of the European Union
- General Secretariat of the European Parliament
- European Court of Auditors

\$107,710

HIGHEST GDP PER CAPITA IN THE WORLD

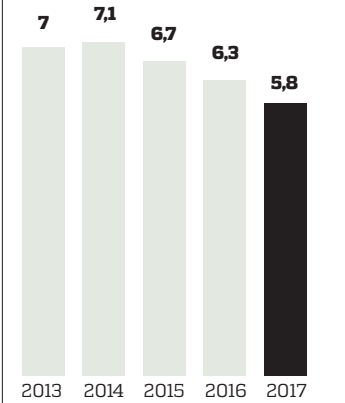
Source: IMF World Economic Outlook, October 2017 (current prices)

GDP GROWTH TWICE OECD AVERAGE



Source: OECD

UNEMPLOYMENT RATE FALLING



Source: STATEC Luxembourg



RATING WITH STABLE OUTLOOK
1 OF 10 COUNTRIES WITH TOP CREDIT RATING

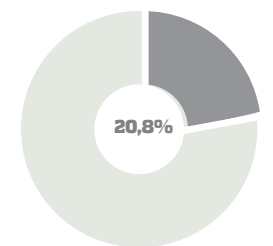
Source: Moody's; Standard & Poor's

1ST cross-border fund distribution center

2ND largest investment fund center in the world after the US

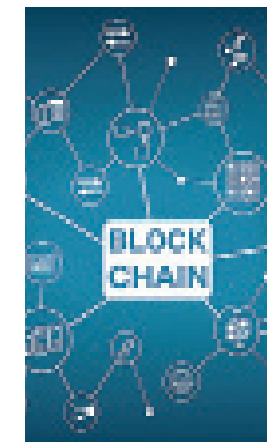
1.6% budget surplus (Maastricht criteria: > -3%)

HEALTHY PUBLIC COFFERS



NATIONAL DEBT/GDP (Maastricht criteria: < 60%)

Source: STATEC Luxembourg, 2016



Fintech Firsts

Luxembourg has made the world's first:

- Investment fund transaction powered by blockchain technology (FundsDLT)
- Stock exchange for green securities (Luxembourg Green Exchange)
- Joint fund between the EIB and an EU state to fight climate change (Luxembourg-EIB Climate Finance Platform)

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The Passerelle, also known as the Luxembourg Viaduct, in Luxembourg City.

The nation with a reach much greater than its borders

The size of Rhode Island, Luxembourg has proven it can survive without banking secrecy and remain nimble, setting the bar for the adoption of financial transparency and new technology.

By Justin Calderón
justin@the-businessreport.com

When banking secrecy came to an end in Luxembourg on January 1, 2015, critics sneered. The EU nation, a prominent financial capital on the continent, would lose its luster for global wealth. Not a few feared that Luxembourg had spelled out its imminent doom.

Just the contrary has come to pass. In response to the evolving standards of global banking, Luxembourg has taken up the vanguard in its pace to adopt new EU regulations that promote banking transparency, and headlines of the financial industry now tell of a very different story: that of world-first experiments in fintech that

promise to shape our future. The economy was never affected as critics predicted, and instead persisted to grow with forecasts putting Luxembourg at a 4.22% expansion in 2018, twice the average of the OECD, a bloc of the world's richest countries.

The size of Rhode Island with half the population, Luxembourg is small, but has been able to use this as an advantage by organizing itself like a well-capitalized and politically influential village, given its seat as one of the three capitals of the EU. It has not hurt, either, that the Grand Duchy, an old type of monarchy, naturally sits at the heart of Europe, both geographically and linguistically.

“Everybody in Luxembourg speaks at least three languages: French, English and Ger-

“The world's first-ever blockchain-enabled transaction in the investment fund industry was processed last July in Luxembourg.”



PHILIPPE MEYER
Managing Partner of
KPMG Luxembourg

“All the big US multinationals are one way or another in Luxembourg – Google, Amazon, Paypal.”



PAUL MOUSEL
Partner at
Arendt & Medernach

man,” says Paul Mousel, partner at Arendt & Medernach, the country's largest independent law firm. “Political stability prevails, and there is also a very short degree of separation with authorities, making the government very easy to access.”

US corporations have long known this, and continue to set up EU bases in Luxembourg, with a new wave in financial investment coming in reaction to Brexit. “All the big US multinationals are one way or another in Luxembourg – Google, Amazon, Paypal, Starbucks, McDonald's,” Mousel says. “And now more and more US banks are arriving.”

Too small to compete head-on with massive financial centers, Luxembourg has evolved into a hyper-specialist, crafting niche after niche in finance (namely with investment funds, wealth management, and insurance), and advancing them through the application of new technology. “Inside our financial sector, a lot of innovation is taking place in climate finance, green bonds and fintech, which are all new and promising fields,” observes Philippe Meyer, managing partner of KPMG Luxembourg.

One of the pioneering firsts in finance that Luxembourg has launched promises to revolutionize the fund industry through the utilization of blockchain, the famed digital, decentralized and public ledger technology first used in Bitcoin. “Through FundsDLT (Distributed Ledger Technology), which is a collaboration between Fundsquare, a subsidiary of the Luxembourg Stock Exchange; InTech, a subsidiary of PostLuxembourg; and ourselves, the world's first-ever blockchain-enabled transaction in the investment fund industry was processed last July in Luxembourg,” says Meyer.

The application of blockchain could be especially transformative, given that the global fund industry still relies on antiquated forms of communication technology, including fax machines. “FundsDLT has the aim of dramatically increasing operational efficiency in order processing and assisting asset managers,” continues Meyer. “This is a development that will continue to underscore Luxembourg as a specialist and stands as proof that innovation is something we have always had in our DNA here.” ■



PIERRE GRAMEGNA
Minister of Finance of
the Grand Duchy of Luxembourg

“Our economy will be 25% larger than in 2013”

By Marie Leclercq
marie@the-businessreport.com

Luxembourg's economy is forecast to continue growing at twice the OECD average this year. Minister of Finance Pierre Gramegna explains what's driving sustained growth.

Where is the economy heading in 2018?

If we continue to grow by 4% in 2018, our economy will be about 25% larger than in 2013. This is due to the financial center becoming a hub for global private banking, the fund industry writing new records, and the service economy supporting new projects, such as space mining.

How have financial transparency reforms changed Luxembourg?

After we abandoned bank secrecy in 2014, we stood out much better because we now comply with best international standards. Together with the EU, Luxembourg is among the most ambitious places in the world that is embracing banking transparency.

Why is Luxembourg so attractive for global companies?

What makes Luxembourg truly attractive is our triple-A credit rating with a stable outlook. Moreover, we have a reasonably attractive corporate tax rate, which stands at 18% in 2018, and a highly productive population in the heart of the EU. ■

Brexit unleashes new wave of US corporate migration

Brexit has already spurred several US financial institutions to relocate to Luxembourg. It's a migration the Grand Duchy has long prepared for.



Amazon, like several other US multinationals, has chosen Luxembourg to host its European headquarters.

By Justin Calderón
justin@the-businessreport.com

The dramatic decision of the UK to pull out of the EU came as a mixed blessing for Luxembourg, which stands to lose a strong negotiating partner in the bloc, while gaining investment and talent from major financial institutions that are choosing the Grand Duchy as their new EU base. The initial estimate, made by the country's financial development agency, is that 3,000 new jobs will come to Luxembourg as a result of Brexit within the next two years. As of the time of writing, US financial firms such as Citigroup, Northern Trust and JP Morgan have all announced relocation plans to Luxembourg.

Experts believe the newcomers from London will fortify Luxembourg's highly specialized financial system, which revolves around banking, insurance, wealth management and

investment funds. "After Brexit, Luxembourg can become the new gateway to the EU market for, among others, UK and US fund managers because of the numerous innovative investment structures here," says Henri Wagner, Managing Partner of Allen & Overy, a global law firm, which has offices in 31 countries, including Luxembourg. "Brexit has been positive overall for Luxembourg," he continues, "but now we need to stabilize the situation by ensuring that these firms can easily transfer their businesses here."

A small country, Luxembourg has been forced to internationalize, and business leaders say this makes the Grand Duchy a successful case study for globalization. "Companies based here can deploy an international staff all operating out of a single location, and with neutral branding," says Paul Schonenberg, Chairman of AmCham Luxembourg.

Yet, for Schonenberg, Brexit seems to mark just another wave of corporate migration for Luxembourg that began after World War II. "Following the Marshall Plan, big US manufacturers came here, such as Dupont and Goodyear. The second wave came with the EU legislation for cross-border funds in the 1980s," he says. "Luxembourg has been standing on its own two feet for a while, regardless of Brexit." ■

“Following the Marshall Plan, big US manufacturers came here, such as Dupont and Goodyear. The second wave came with the EU legislation for cross-border funds in the 1980s.”



PAUL SCHONENBERG
Chairman of AmCham Luxembourg

“After Brexit, Luxembourg can become the new gateway to the EU market for, among others, UK and US fund managers.”



HENRI WAGNER
Managing Partner of Allen & Overy, Luxembourg

By Marie Leclercq
marie@the-businessreport.com

While the average global CEO worries over attracting talent and staying apace with technological change, these areas are where Luxembourg is most competitive, says John Parkhouse, PwC Luxembourg's UK-born CEO and Senior Partner.

How does Luxembourg compare with other EU business hubs?

Luxembourg is more dynamic, diverse and innovative than other jurisdictions. For example, our population mix is incredible – 77 nationalities are represented in PwC alone. Luxembourg's melting pot of cultures, experiences and insights truly enhances its global business stature.

Is Luxembourg ready for the estimated 3,000 new jobs Brexit may bring?

PwC Luxembourg is helping UK-based firms find solutions to stay successful in the EU single market. From the beginning, Luxembourg has been very clear on its strategy to help the UK. The country's government is going to get the right infrastructure and eco-system ready for any newcomers.

What are the main takeaways from PwC's 2017 CEO survey?

CEOs here are more confident than the global average, and more sensitive to regulations, namely those that have come about in the aftermath of the 2008 global financial crisis. Yet, Luxembourg-based CEOs are bullish, stressing opportunity and growth, while global CEOs are concerned over talent attraction and technological disruptions.

How is PwC supporting local companies to embrace digital transformation?



JOHN PARKHOUSE
CEO and Senior Partner of PwC Luxembourg

“CEOs here are more confident than the global average”

Luxembourg's access to a diversity of talent means companies are more free to focus on emerging fields and technologies.

Every body is being touched by digital transformation, which is affecting user experience, data analytics, robotics and automation. PwC Luxembourg helps by providing local expertise supported by our global knowledge. In early 2018, we'll launch what we call our Experience Center, which will be operated as a co-creation hub where clients can plug-in their technologies, experiment with data boards, sandbox their ideas and test solutions.

“PwC Luxembourg is working with the government and others on reskilling; that is, to see which skills will be needed in order to transform present skills into future ones.”

Where do you think Luxembourg will emerge as a global innovator?

Luxembourg can lead in Fin-tech, whereby companies find new ways to merge technology with finance. Also, with the Space Resources initiative, there are now at least 60 firms eyeing Luxembourg to operate space mining businesses or work on related technologies. This is a great example of how Luxembourg is capable of taking a new field and then build a niche that resonates with global business.

How is PwC aiding local skills development?

PwC Luxembourg is working with the government and others on reskilling; that is, to see which skill sets will be needed in order to transform present skills into future ones. Business and government must manage labor markets and societal disruption, or risk losing business sustainability.

What is currently driving growth at PwC Luxembourg?

Having surpassed the €400 million-turnover mark in 2017, growth is now coming from new technology, investment in liquid assets and private equity, as well as increased regulation. However, this year our strongest growth dimension was on the tax side, with a big focus on helping clients meet increasingly complex compliance needs.

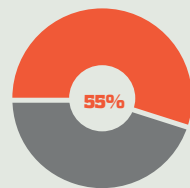
As a Briton living here for 23 years, what are some prevailing myths about Luxembourg that you can debunk?

One common myth is that Luxembourg is a sleepy backwater, which it is not. Luxembourg is a melting pot of talent that looks forward. Another myth, that you need speak Luxembourgish or French, is also false. I'm living proof of that. ■

FAST FACTS FINANCE & BANKING

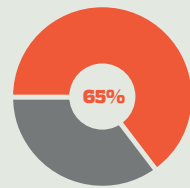
Luxembourg hosts:

143 BANKS
with **€766 billion**
in assets



55%
of private bank clients
have accounts over
€20 million

4,110 INVESTMENT FUNDS
with over **€4 trillion**
in assets



65% of market
share in global cross-
border fund distribution

50 LIFE INSURANCE COMPANIES
with total premiums
of **€23 billion**



Majority of premiums
are from France (33%)
& Italy (16%)

Fund industry tops €4 trillion on UCITS success

The UCITS, an EU-based mutual fund, is one of the secret ingredients to growth in the EU's fund industry, and Luxembourg leads the way.



A modern finance center, Luxembourg handles 36% of all UCITS funds in Europe.

By Justin Calderón
justin@the-businessreport.com

When the Luxembourg fund industry reached a record €4 trillion in assets last September, it marked another celebratory moment in the short lifespan of the UCITS, a type of EU-based mutual fund that was initially only intended for European retail investors when it was created 30 years ago. That the fund industry continues to reach new heights is largely due to UCITS, says the Association of the Luxembourg Fund Industry (ALFI), with support also from alternative funds.

“UCITS is really one of Europe's greatest success stories. It has become a global brand,” Den-

ise Voss, Chairwoman of ALFI, observes. “Luxembourg UCITS has become a global brand as well, given our large share of the UCITS market.” As the world's second largest investment fund center after the US, Luxembourg, as of June 2017, makes up the largest share of all inflows into UCITS funds in Europe, at approximately 36%, data from the European Fund and Asset Management Association shows.

Build up in alternative funds, particularly in private equity and real estate, are also expected to continue due to growing institutional investor demand. “The Alternative Investment Fund Managers Directive (an EU regulation) has opened up new opportunities, and the largest US fund promoters are now here,” says Pit Reckinger, a partner at Elvinger Hoss Prussen, a local law firm.

Luxembourg has drawn global appeal to its funding industry due to its relatively small size, which forces financial players to look across its borders. “A thread throughout the entire Luxembourg financial industry is its international dimension,” says Nicolas Mackel, CEO of Luxembourg for Finance, the nation's development agency for the financial sector. “Whether we are talking about funds or about client and wealth management, what is common to all of this is the fact that all clients and operations have a multinational or cross border dimension,” observes Mackel.

“There are large differences between countries in terms of national practices and regulations,” he continues, “but in Luxembourg you find people who know at the same time the Spanish, Swedish and Dutch market. This is what is very unique about Luxembourg,” he asserts. ■

“A thread throughout the entire Luxembourg financial industry is its international dimension.”



NICOLAS MACKEL
CEO of Luxembourg for
Finance

DAVID SUETENS

Executive Vice President and Country
Head of State Street Bank Luxembourg



“We represent roughly
25% of the fund
industry”

By Marie Leclercq
marie@the-businessreport.com

As the largest single player in Luxembourg's fund industry by assets, State Street has come to discover why the Grand Duchy has become such a global success in this financial service. David Suetens, the bank's country head, explains.

What role does your bank play in the fund industry, and what explains Luxembourg's rise?

When Luxembourg crossed the record €4 trillion mark, State Street crossed the \$1 trillion threshold, and now we represent roughly 25% of the fund industry. Luxembourg is unique in that its innovation agenda is dedicated to the fund industry, making it a highly attractive and efficient platform for fund distribution to asset managers and investors. Moreover, it also offers a very specialized business environment that focuses on asset managers and providers.

“Luxembourg is unique in that its innovation agenda is dedicated to the fund industry, making it a highly attractive and efficient platform for fund distribution.”

What makes the bank stand out in the fund industry?

Given our global footing, we often attract clients from newer markets into Luxembourg, including Asia, South Africa and Latin America; with Luxembourg funds often seen as best-in-class for governance and regulatory oversight.

What are some of your main growth strategies?

State Street is a leading provider of ETF servicing not only in Luxembourg, but also globally. This is definitely a differentiator for the future. We are one of the sole providers that offer a combined package within Luxembourg, which includes fund accounting, custody, and the transfer agent, which monitors and calculates impacts on the funds.

How are you adapting to new regulations?

New regulations are creating further pressures on our clients; we can help them navigate this challenge through our regulatory offering. Safeguarding our clients' assets and offering these specific regulatory solutions allows our clients to focus on their core investment mandate. ■

“Northern Trust has
chosen Luxembourg
following Brexit”

STEVE DAVID

Luxembourg Country Head of
Northern Trust



By Justin Calderón
justin@the-businessreport.com

Chicago-based Northern Trust was one of the first financial institutions to announce the creation of an EU banking presence in Luxembourg after Brexit. Steve David, Northern Trust's Luxembourg Country Head, explains how Luxembourg's developed international finance ecosystem helped Northern Trust make the decision.

How would you assess the fund industry?

It's a key pillar of Luxembourg's economy and contributes 8% to the GDP of the country. Over the last three years, the fund industry has grown from €3 trillion to €4 trillion. Luxembourg has really capitalized on the expertise it started building in the 1980s, when we implemented the first UCITS directive.

What made Northern Trust choose Luxembourg?

I don't think there is a more international financial center on the continent than Luxembourg, given its multicultural environment. Northern Trust has chosen Luxembourg following Brexit as the future domicile for its EU banking presence, with London remaining the headquarter.

“I don't think there is a more international financial center on the continent.”

ters for the company's business in Europe, the Middle East and Africa. We made this decision even not knowing the exact terms of Brexit. In the process, we made a comparison between Luxembourg and Ireland, and rated both locations highly. The balance leaned towards Luxembourg because we acquired UBS Asset Management's fund administration servicing units in Switzerland and Luxembourg recently, which added 1,000 funds and an extensive number of clients to Northern Trust.

What makes Northern Trust stand out?

Our asset manager and institutional investor clients require customized services, so we must treat them like a private bank does. This is our differentiating factor. We offer each client a lot of assistance and transparency, as well as access to our knowledgeable staff. Northern Trust also has a solid balance sheet, with a strong credit rating. This is important because clients buy not only a service, but also the brand Northern Trust itself. ■



RENÉ MOTTAS
Country Head of UBS Luxembourg

“You win if you adapt to regulations fast and thoroughly”

Luxembourg is proving that it can remain competitive under stricter financial regulations.

By Marie Leclercq
marie@the-businessreport.com

With the continued tightening of financial regulations, Luxembourg is being presented a golden opportunity to race ahead by adapting with the speed that only a nimble market can possess. UBS Luxembourg’s Country Head René Mottas says the country’s wealth management and private banking business will continue sturdy growth, even without banking secrecy.

How can UBS Luxembourg compete in the post-2008 regulatory climate now that banking secrecy is gone?

Twenty years ago, banks moved into the wealth management or private banking business not only because they believed in its growth potential, but also because it held the assurance of predictable income. These days are gone. Today, regulatory requirements necessitate leading banks to build on a stable and solid legal framework. For example, from January 2018, an updated ver-

sion of the Markets in Financial Instruments Directive, or Mifid II, will affect how banks report business and transactions to regulators. As a global leader in wealth management, UBS believes in doing all its business in the right way. You win if you adapt to regulations fast and thoroughly. This is an opportunity for us to gain a competitive advantage.

“It is challenging for Swiss banks to do business in some EU countries as funds under Swiss law cannot be distributed to EU clients. It requires an EU-passported structure, potentially in Luxembourg...”

How do you see Luxembourg compared to Switzerland?

If you are in private banking, wealth management or the fund industry, you need to be present in the EU. It is indeed challenging for Swiss banks to do business in some EU countries as funds under Swiss law cannot be distributed to EU clients. It requires an EU-passported structure, potentially in Luxembourg or Ireland, which provides access and proximity to European investors. For this reason, many use Luxembourg – being a truly international and multilingual, yet highly efficient financial center – as their EU base.

What is your perception of the wealth management development in Luxembourg?

There has been a total evolution in wealth management following the disappearance of traditional banking secrecy laws. Clients still have privacy, if not secrecy rights. Business remains mostly European, although clients from Latin America and Asia Pacific are

becoming increasingly interested. We also attract families and investors seeking geographical diversification.

How important is Luxembourg within UBS’s global network?

UBS is a key player for the Group providing a unique and complementing Wealth Management and Asset Servicing solution shelf to other locations. We service UHNW clients, as well as family offices seeking fund structures in a regulated market. Luxembourg fund solutions are in high demand now, and our asset servicing business has more than doubled in the past five years.

What more would Luxembourg need to truly flourish in fintech?

As a small country, Luxembourg is very efficient for business because it is nimble. Fintech has vast potential here, but in order to flourish Luxembourg will need to attract the respective talent in financial technology. Finding the exact right profiles within the local pool of talents is challenging. Brexit may spark further interest and it remains to be seen which businesses will relocate.

How does UBS Luxembourg manage to attract top financial talent?

Locally, we run several programs, including one concentrating on increasing female inclusiveness in finance, which we established with the Luxembourg School of Finance but meanwhile goes beyond. Because Luxembourg is rather small, we need to broaden our horizon to find talents across our borders. We have in the past five years recruited a number of young people coming from or moving on to other EU countries. UBS has proved to be highly attractive for the best talents and this makes us proud. ■

A green revolution in finance is born

Luxembourg is embarking on a more sustainable vision of finance, as demonstrated by the launch of the world’s first green securities exchange.



Electric car makers are some of the companies that can use the Luxembourg Green Exchange to finance their growth.

SOURCE: Luxembourg Stock Exchange

By Justin Calderón
justin@the-businessreport.com

Luxembourg has taken up the global vanguard in melding climate concerns with financial technology, conducting pioneering firsts, including the launch of the world’s first green securities exchange and the EU’s first joint climate fund, which was co-created alongside the Luxembourg-based European Investment Bank.

The Grand Duchy’s leading financiers credit this innovative spirit to the sector’s ability to adapt new technology to real-time global demand – all within the framework of rapidly changing regulations. “Because of its size, Luxembourg was always able to adapt quickly,” attests Guy Hoffmann, CEO of Raiffeisen Bank Luxembourg, the country’s largest cooperative bank. “We have thus been able to be quite innovative on a couple of issues, especially in

“Luxembourg could be the pilot of this new sustainable impact on the global financial ecosystem.”



VÉRONIQUE DE LA BACHELERIE
CEO of Société Générale Bank & Trust Luxembourg

fintech and green bonds,” he says, referring to the Luxembourg Green Exchange, which exclusively lists “green, social and sustainable securities,” according to the Luxembourg Stock Exchange, the project’s parent operator.

Banks may soon begin to follow suit, offering a generation of more eco-conscious customers

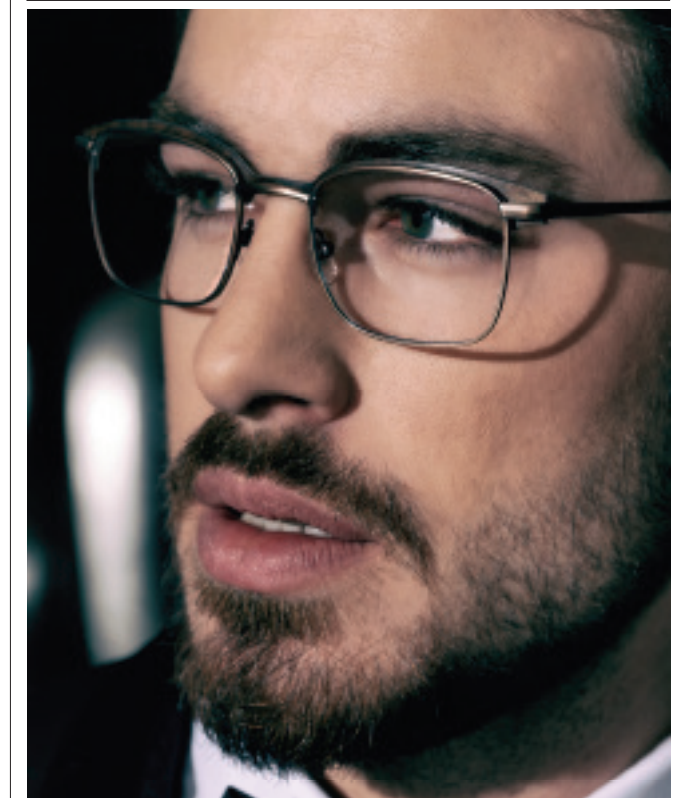
new ways to ensure their money is used for sustainable causes. “Green tech is not only about climate finance, like green bonds,” observes Véronique de la Bachelerie, CEO of Société Générale Bank & Trust Luxembourg, one of the country’s oldest banks. “It is much larger and encompasses new social and environmental trends that banks like Société Générale will begin adapting to.”

The next step, de la Bachelerie says, is commitment, and Luxembourg could be the place that provides the political and financial willpower to groom a new breed of investors. “We have to create a relevant green tech ecosystem for this generation,” she asserts. “I believe it will be easier to create this in a small and engaged country, and that’s why I am convinced that Luxembourg could be the

pilot of this new sustainable impact on the global financial ecosystem,” she says, adding that Société Générale has announced to establish a laboratory dedicated to green financial products in Luxembourg.

For this revolution in finance to awaken, clients will need more accessibility first, as well as better digital platforms to communicate the pluses of investing in green securities.

“Our challenge today will be to deliver both a personalized service in our branches and an online user experience expected of a solely digital bank,” comments Hoffmann. “That’s why we have invested in a new integrated IT platform, and why we were the first to switch from the classical hosting systems to operating one integrated platform,” he adds. ■



GOLDWOOD
— BUSINESS —

**FAST FACTS
LOGISTICS**

Did you know Luxembourg made and shipped:



The high-strength steel beams used to build **New York's Freedom Tower**



The low-emissivity glass used in **Dubai's Burj Khalifa**



Tires equipped on the **limousine of the US President**



The **steel ball** used in your ballpoint pens, many of which come from Luxembourg.

By **Justin Calderón**
justin@the-businessreport.com

Luxembourg is embarking upon a €3.8 billion decade-long infrastructure-spending spree to upgrade its railway system and establish modernized transportation terminals that will enable the nation to plug-in to the future of mobility, including autonomous-driving vehicles and electric vehicle charging stations. The campaign is further proof, government officials' attest, that the Grand Duchy can muster the political willpower to continue modernizing infrastructure for the logistics industry while simultaneously nurturing breakthroughs in mobility.

Luxembourg already has infrastructure that is considered among the most advanced in the world, supported by one of the EU's largest infrastructure budgets by percentage of GDP, worth €2.3 billion in 2016, and takes the number two spot after Germany in the World Bank's global logistics capability index. This new investment commitment can then be seen as more of a sign that Luxembourg refuses to stand complacent at the top, and would rather ratchet-up spending to further entrench the competitiveness of the logistics sector, the nation's third largest industry.

"Luxembourg has a large natural advantage being at the heart of Europe," says François Bausch, Minister of Infrastructure and Sustainable Development, when asked about the Grand Duchy's strengths in logistics. "And we don't suffer from congestion or strikes like some of our neighbors," he asserts.

Seeking to further specialize, the administration of Prime Minister Xavier Bettel has been particularly keen to apply budgetary focus on developing logistics-related infrastructure com-



A future transportation hub connecting a new tram, upgraded rails, electric-vehicle charging stations and more.

SOURCE: Ministry of Infrastructure and Sustainable Development

Multi-billion euro plan paves way for logistics and mobility future

With infrastructure that is already among the most advanced in the world, Luxembourg is now planning to invest 3.8 billion more to take the top spot in global logistics rankings.

pared to past governments, especially for the railway system and airport cargo. "In the last few years, we have enrolled into a dual strategy with the airport on one side and the national railway company, the Société Nationale des Chemins de Fer Luxembourgeois (CFL), on the other side," says Bausch. "Last July, CFL inaugurated the Bettembourg multi-modal terminal, which became one of the most modern railway hubs in

Europe, capable of transferring huge shipments from trucks to railway and vice versa," he adds.

In the ambition to hyper-integrate all components of the industry, the Bettembourg hub would then be connected to the landlocked nation's only port, which serves some of Europe's largest coastal logistics centers. "Although we have no sea in Luxembourg, with the Port of Mertert we are highly linked to

the North Sea of the Atlantic and big harbors, such as Rotterdam and Antwerp," says Bausch.

Originally built as the shipping hub for the country's steel industry, the Port of Mertert has handled the shipment of massive metal materials used to build skyscrapers, (see Fast Facts), among other structures, and now manages a diverse range of commercial goods, such as containers and heavy concrete elements for the construction of windmills, having also been the subject of increased budgetary assistance in recent years. "The Port of Mertert had about €20 million invested in its infrastructure over the past decade," says Jeannot Poeker, the port's president, "including €9.5 million for the railway tracks and about €5.5 million for the North quay. Additionally, the turning basin will be upgraded in order to be able to handle larger ships measuring up to 135 meters in length," he adds. If all goes as planned, the upgraded port and new Bettembourg terminal

“Luxembourg will be like a laboratory. We will invite anybody that wants to test and explore innovation in transport to carry out experiments here in the Grand Duchy.”



FRANÇOIS BAUSCH
Minister of Infrastructure and Sustainable Development

“The Port of Mertert will combine with the Bettembourg terminal, and then CFL has plans to link Bettembourg with a train route to China, giving the industry yet more possibilities.”



JEANNOT POEKER
President of Port of Mertert

could become part of a joint national logistics node, connecting Luxembourg's business world to Asia. "The Port of Mertert will combine with the Bettembourg terminal, and then CFL has plans to link Bettembourg with a train route to China, giving the industry yet more possibilities," Poeker announces.

The Luxembourg laboratory About €250 million of the infrastructure investment cache has already been allocated for the construction of new transportation hubs (see photo). These transportation hubs will be built with the intention of being compatible with modern models of buses, trains and cars, as well as emerging developments in transport, namely electric and autonomous-driving vehicles. The so-called exchange centers will also be connected through an electric tram system – which will receive a separate budget of €700 million – to position Luxembourg City, which generates 70% of the country's GDP, as one of the most ambitious urban projects in the future of mobility.

"We want to be a frontrunner for new mobility services, while maximizing digitalization in

both the transportation and logistics sector," says Bausch, citing an agreement signed between the governments of Luxembourg, Germany and France to launch a test site for autonomous-driving vehicles in Luxembourg in 2018 to study how developments in mobility and digitization can interact.

"This site will be not only for autonomous-driving cars, but also for shuttles," he says. "Digitalization will bring lots of changes in the mobility sector, and we'll have much more possibilities to better organize transportation than in the past," he adds.

"Luxembourg will be like a laboratory. We will invite anybody that wants to test and explore innovation in transport to carry out experiments here in the Grand Duchy." ■

Félix Giorggetti, player in the construction industry for more than a century.

- Road works and civil engineering
- Development, design and sales of housing, administrative and public buildings.

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A Cargolux 747-8F aircraft loads vehicles into the nose cargo hold.

SOURCE: Cargolux

New fleet of greener aircraft keeps Cargolux operations at sustainable heights

Cargolux, Europe's largest air cargo carrier, has invested in a new fleet of aircraft that will reduce carbon and noise emissions.

By Marie Leclercq
marie@the-businessreport.com

Cargolux, Europe's largest cargo airline, with a worldwide network of over 90 destinations, has combined efficiency with sustainability by adding a new generation of greener aircraft to its fleet. "We have invested in a new fleet of 747-8F aircraft, which are more environmentally friendly both in terms of carbon and noise emissions," says Richard Forson, President & CEO of Cargolux. "They don't come cheap, but this shows that environmental, as well as financial sustainability are high among our priorities."

The fleet rollover program, which was completed with the delivery of the fourteenth 747-8F in late 2016, brings the Cargolux fleet to twenty-seven 747 freighter

aircraft, and comes just as more cargo ramp space is being added at the Luxembourg Airport, the airline's home base.

"Cargolux has seen significant growth in its fleet. Since 2011, we almost doubled the number of aircraft we operate," Forson says. "This requires more space at our home base, so the expansion of infrastructure is supporting our growing operation." The airport upgrades follow a record year for the cargo industry. In 2016, volumes rose by 17% year-on-year and, with 821,000 tons of cargo, Luxembourg was Europe's sixth-largest airfreight hub.

Cargolux's success can be attributed to its ability to offer a wide range of flexible solutions, including the shipping of live animals, heavy or oversized cargo, or perishables and pharmaceuticals.

“Cargolux has seen significant growth in its fleet. Since 2011, we almost doubled the number of aircraft that we operate.”



RICHARD FORSON
President & CEO
of Cargolux

In 2017, Cargolux entered into partnerships with other leading carriers, including Emirates SkyCargo and Nippon Cargo Airlines. The airline has also established strong ties with China through its shareholder Henan Civil Aviation and Investment. Together, they have established a complementary hub to Luxembourg in Zhengzhou, which has created increased flight activity and the establishment of a new Zhengzhou-based sister airline, Henan Cargo Airline.

"These partnerships allow us to offer more destinations," says Forson. Meanwhile, a deal with SkyCell, a leading Swiss manufacturer of cooling containers for perishables and pharma shipments, will give Cargolux access to use low-weight containers to reduce costs and carbon emissions, further strengthening the company's role as one of the world's premier air cargo operators. ■

Luxembourg's top construction firm, Félix Giorgetti, says need for affordable housing in the Grand Duchy is immediate.

Housing gap of up to 6,000 homes: Top construction firm

SOURCE: Félix Giorgetti



Design for an apartment complex by Félix Giorgetti

By Marie Leclercq
marie@the-businessreport.com

Housing prices continued to climb in 2017, rising 7.7% to an average price of €6,000 per square meter for an apartment, comparable to the Netherlands market. New supply is immediately needed, or more people will be forced to commute from neighboring countries, warns Marc Giorgetti, managing director of Félix Giorgetti, Luxembourg's largest construction firm.

"Insufficient affordable housing options mean that over 200,000 workers have to commute every day to come and work in Luxembourg," Giorgetti says, adding that there is a current lack of 5,000 to 6,000 homes in the country. "Luxembourg's population is growing by about 12,000 inhabitants each year, widening the housing gap," he explains.

Luxembourg's need to fill the housing gap, combined with more government spending for infrastructure, is likely to satiate construction investors, believes Giorgetti. Yet, cost stability depends on cheaper foreign labor, and Giorgetti warns that with 18,000 laborers now active, Luxembourg is "at the maximum limit" of foreign construction workers it can utilize. "Constructions workers in Luxembourg have increased from 12,000 to 18,000 people," he remarks.

With an annual turnover of €450 million, Félix Giorgetti has been involved in many projects for residential and commercial housing, such as Ferrero International's new international headquarters. The company was also behind the Luxembourg Airport cargo center expansion, and the new Bettembourg-Dudelage intermodal logistics terminal, which was the country's largest project to be built by one prime contractor. ■



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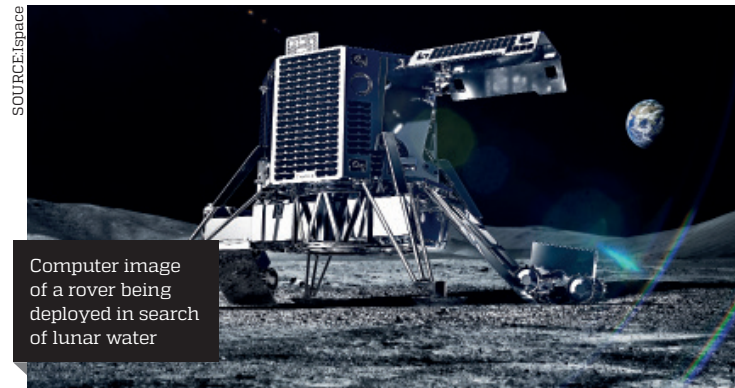
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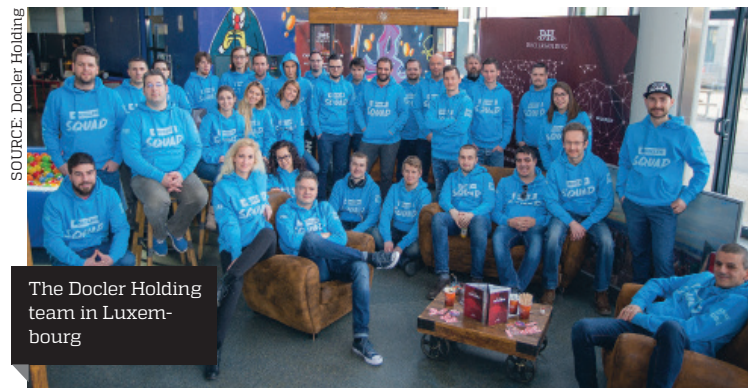
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INNOVATION**Did you know
Luxembourg is:**#1** in the
world for
**technological
readiness**Source: Global
Competitiveness Report,
WEF 2017-18where **87%**
of **scientists**
are **non-
Luxembourgish
nationals**Source: Luxembourg
National Research Fund**7th** in the
world for **talent
attraction and
retention**Source: Global Talent
Competitiveness
Index 2017where **"42%**
of **students**
are enrolled
**in Master's
or doctoral
programs"**Marc Hansen,
Delegated Minister of Higher
Education and Research**MARC SCHILTZ**Executive Head and Secretary General of
the Luxembourg National Research Fund**“Over the past 15 years
public R&D spending
has increased 12 fold”****Luxembourg's research funding agency is
running groundbreaking programs that
have piqued the interest of NASA.**By Justin Calderón
justin@the-businessreport.com**Once home to Luxembourg's
largest steel foundry, the
southern town of Belval is to-
day the headquarters of pub-
lic research, where break-
throughs in biomedical and
ICT research are just on the
horizon. The Luxembourg
National Research Fund
(FNR), the public research-
funding arm, is based here,
along with the country's ma-
jor research institutes. Marc
Schiltz, the FNR's Executive
Head and Secretary General,
tell us about how Luxem-
bourg is positioning itself as
a global hub of innovation.****Can you give us background
on the research landscape?**Public research is a relatively
young endeavor. Until 25 years
ago, there was little public re-
search activity. That changed
considerably following the
foundation of FNR in 1999. As a
result, over the past 15 years
public R&D spending has in-
creased 12 fold, and we are now
over the European average with
0.7% of GDP.**Which research fields can
Luxembourg specialize in?**We have a department dedicat-
ed to research in the ICT sector,
called the Interdisciplinary
Centre for Security, Reliability
and Trust (SNT), which is part
of the University of Luxem-
bourg. Within this discipline,
we hope to train future experts
in data, information systems
and security. Secondly, wehave the Luxembourg Center
for Systems Biomedicine,
which has become one of our
flagship projects.**Can you give us a couple of
examples of successful re-
search programs?**Every year, FNR hosts various
awards to inspire the innovative
spirit. One public research pro-
gram that has triggered global
interest this year has been the
HuMiX project, which endeav-
ors to model a system of the hu-
man gut in the form of a chip
where you can simulate parts of
the human gut and biome. This
is called the microbiome re-
search and is currently one of
the hot topics in the medical re-
search world. Another program
is FieldSpec, which revolves
around a miniature mass spec-
trometer, an instrument with
wide areas for application.
NASA is interested in collabora-
tion to use one of these spec-
trometers on satellites.**What are the challenges as a
young research destination?**As we grow in a few domains,
such as ICT or biomedical, we
are becoming much more at-
tractive, especially for foreign
talent. For a researcher, Lux-
embourg is attractive because
of the prioritization of R&D
spending. Yet, we have the
challenges of a small country:
We can't cover a broad spec-
trum of research, so we have to
set priorities and focus on a
limited number of areas.**What are your plans to build
international partners?**We have concluded bilateral
cooperation agreements with
more than 18 organizations.
Over the past years, we have
also started to go beyond Eu-
rope, and we now collaborate
with the National Science
Foundation of the US. Since our
research is highly focused,
when we seek out global ex-
perts, we try to match the best
with the best. ■**The Luxembourg Institute of Science and Technology is
upgrading lunar rovers in search of minerals and water.****Research institution plots
course to help mine moon**

SOURCE: ISPACE

Computer image
of a rover being
deployed in search
of lunar waterBy Justin Calderón
justin@the-businessreport.com**L**uxembourg's economy is
aiming high – for the
moon, to be precise. Late
last November, the Luxembourg
National Research Fund made its
first ever commitment to the de-
velopment of space mining. The
€700,000 in funds will support
two space-related projects to har-
vest the moon for a variety of re-
sources, including metals such as
iron, nickel, tungsten cobalt and
rare-earth elements, as well as lu-
nar water, which scientists believe
could eventually be used to sustain
human life beyond our planet.While hitherto the realm of space
has been strictly that of national
governments and international
agencies, today private firms have
easier access to emerging technol-
ogies. Luxembourg wants to make
that access even easier. “The space
industry can utilize our miniatur-
ized analytics equipment, which
can be retrofitted to microscopes to
provide super-high resolution,”
comments Fernand Reinig, CEO of
the Luxembourg Institute of Sci-
ence and Technology (LIST),
which, together with the Universi-
ty of Luxembourg, will receive the
funding for both space projects.Structured as public-private part-
nerships, both projects will inten-
sify Luxembourg's collaboration
with ispace, a Tokyo-based lunar
exploration company that recently
moved its research and develop-
ment activities to Luxembourg.
“Robotic space rovers made by is-
pace will harvest lunar water and
we will mature their mass spec-
trometers, an instrument that will
allow for detailed material analysis
of that water,” Reinig declares.
“We are also applying patents from
other fields to the more than dozen
other space projects currently run-
ning at LIST,” he adds.The next step for LIST and ispace
is to develop a space-deployable fo-
cal plane detector, a device that
can map a range of masses simul-
taneously, which will be attached
as a backpack to lunar rovers. That
the underlying objective is to iden-
tify and utilize resources in outer
space – not to bring them back to
earth – is an indication of Luxem-
bourg's ambition.“Luxembourg's economy is ori-
ented towards the future, and it is
based on new technologies,” ob-
serves Reinig. “In this way, Lux-
embourg has become a laboratory
that can oversee the creation of the
economy of the future.” ■**ULF NEHRBASS**CEO of the
Luxembourg Institute of Health**The crossroads
of medical
research**By Marie Leclercq
justin@the-businessreport.com**W**hile Germany and France have
established definitive edges in
biomedical research, Luxem-
bourg is carving out its own niche in medi-
cal translational research, whereby the
Grand Duchy would become a depository
for general research used to improve the
global healthcare system.In particular, medical professionals believe
that Luxembourg is excelling in its ability
to use clinical observations to stimulate re-
search, and then apply those laboratory re-
sults quickly to develop new patient treat-
ments (a process known as
bedside-to-bench-to-bedside integration)
due to its compact size. “Bedside-to-
bench-to-bedside integration is working
better here than in other countries simply
because distances are shorter, so every-
thing is more integrated and vertical plan-
ning is more effective,” observes Ulf Nehr-
bass, the newly appointed CEO of the
Luxembourg Institute of Health.This tight integration of the medical indus-
try would enable Luxembourg to become a
“test-bed” for more personalized approach
to healthcare. “Luxembourg is able to have
a first mover advantage in providing highly
personalized healthcare solutions,” says
Nehrbass. “Because Luxembourg sits at the
crossroads between Germany and France,
we thus have the potential to translate basic
research for patients, either here or via an
e-health platform. That is where Luxem-
bourg can create synergies,” he adds. ■

Docler Holding believes that Luxembourg could enable Europe's top live-streaming service to come to life.

Entrepreneurs aim to take over live-streaming niche



The Docler Holding team in Luxembourg

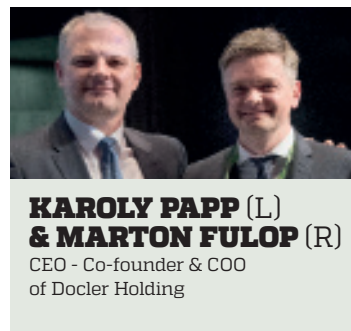
By Justin Calderón
justin@the-businessreport.com

Born as a garage project in Hungary in 2001, today Docler Holding, which runs a Luxembourg-based live-streaming platform, has become proof of the unlocked potential in the Grand Duchy's nascent ICT industry. As a deal with Google to build a data center in Luxembourg begins to unfold, entrepreneurs like Docler could already be establishing a niche that will come to define the ICT sector for years to come.

"When it comes to live streaming, you have lots of products emanating from Silicon Valley or the Asian markets, but there is no real big player in Europe yet," says Karoly Papp, CEO of Docler. "We truly believe that creating a European live-streaming platform, either via mobile or desktop, is something that we could do in Luxembourg," he claims.

The platform Docler is developing stands out because of its low-latency technology, which Papp says is of higher quality due to the talent and technology they employ in Luxembourg, including 100 developers that are dedicated to this type of product.

“When it comes to live streaming, you have lots of products... but there is no real big player in Europe yet.”



**KAROLY PAPP (L)
& MARTON FULOP (R)**
CEO - Co-founder & COO
of Docler Holding

The group of Hungarian entrepreneurs chose Luxembourg because of its business-friendly environment. "Luxembourg's regulations are more business enablers than business blockers," says Marton Fulop, the group's COO, who is now focusing on recruiting more talent to Luxembourg. "The government is open for discussion and embraces change," he adds.

Docler, an international group with various entertainment holdings, is making proactive moves to expand, having just acquired Italy-based Streamago, which will support product expansion. ■



SOURCE: Gold & Wood

Handcrafted eyepieces make global mark

By Justin Calderón
justin@the-businessreport.com

Like Switzerland's iconic Swiss watch, Luxembourg may soon create a synonymous claim in its own luxury accessory: eyepieces. Gold & Wood, an eyepiece manufacturer, has so far spread Luxembourg's global stake in the eyewear category to Hollywood A-listers (Samuel L. Jackson), Silicon Valley titans (Tim Cook) and music superstars (Snoop Dogg) by making them their clients. Having just hired a new artistic director, Gold & Wood is focusing on spreading appeal for its handcrafted Luxembourg-made eyepieces.

Because Gold & Wood's products noticeably omit any brand logo, the only stamp left on the product is that of "Made in Luxembourg," a strategy that aims to transform the product into a global icon like the Swiss watch. "Our eyepieces bear no logo, as we are focused on production quality," says Maurice Leonard, a Belgian national who founded Gold & Wood in Luxembourg in 1995. "We don't measure the time spent on manufacturing, even though they are handmade; we prefer to gauge them by our noble materials, which are the best available, such as rare woods, buffalo horn and more," he says. The addition of Alain Mikli, a famous French-Armenian eyewear designer, as the company's artistic director is hoped to open up more doors. "We already have many people from showbiz, politics and business wearing our eyepieces," says Leonard. "These are high-demanding customers, which says a lot about the quality of the 'Made in Luxembourg' mark." ■

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